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| <b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>  |  | Docket Number (Optional):<br><b>P187-US</b> |  |
| I hereby certify that this correspondence is being facsimile transmitted to the USPTO at (571) 273-8300 or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on <u>March 29, 2006</u> .<br><br>_____<br>Erin Cowles  | Application Number:<br><b>10/781,369</b>   | Filed:<br><b>February 18, 2004</b>          |  |
|   | First Named Inventor:<br><div style="text-align: center;"><b>Cooper et al.</b></div> |   |  |
|   | Art Unit:<br><b>2829</b>   | Examiner:<br><b>Minh N. Tang</b>            |  |
| <p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s).<br/>         Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p><input type="checkbox"/> applicant/inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest.<br/>         See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.<br/>         (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record.<br/>         Registration number: <u>39,923</u></p> <p><input checked="" type="checkbox"/> attorney or agent acting under 37 CFR 1.34.<br/>         Registration number if acting under 37 CFR 1.34: <u>39,923</u></p> </div> <div style="width: 35%; text-align: center;"> <br/>         _____<br/>         N. Kenneth Burraston<br/>         Typed or printed name<br/><br/>         _____<br/>         (801) 323-5934<br/>         Telephone number<br/><br/>         _____<br/>         March 29, 2006<br/>         Date       </div> </div> <p><small>Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</small></p> |  |   |  |
| *Total of <u>4</u> page(s) of supporting arguments are attached.  |  |   |  |

## **ARGUMENTS SUPPORTING PRE-APPEAL BRIEF REQUEST FOR REVIEW**

In support of Applicants' Pre-Appeal Brief Request For Review of the final rejection in the Office Action dated November 29, 2005 (hereinafter the "Office Action") in the above-identified patent application, Applicants respectfully submit the following:

### **I. Background**

Claims 1, 3-5, 7-10, 13, 14, 18, and 21-30 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,773,987 to Montoya ("Montoya"), and claims 6, 11, 12, 15-17, 20, and 31 were rejected under 35 U.S.C. § 103(a) as obvious in view of Montoya and U.S. Patent No. 6,250,933 to Khoury et al. ("Khoury"). Claims 2 and 19 were identified as containing allowable subject matter. In this Pre-Appeal Brief Request For Review, Applicants traverse the rejection of claims 1, 3-18, and 20-31.<sup>1</sup>

### **II. Argument**

#### **A. Independent Claims 1, 3, 6, 18, 20, and 31**

By way of background information, Applicants note that electronic devices can be tested by pressing probes against input and/or output terminals of the electronic devices to establish temporary electrical connections between the probes and the electronic devices. Test and response data can then be provided to and sensed from the electronic devices through the

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<sup>1</sup> In addition, claims 6, 11, 12, 15-17, 20-24, 26-29, and 31 were objected to due to alleged informalities in those claims. With regard to claims 20 and 26, Applicants will amend claim 20, lines 5 and 6 to change "said chuck" to "a chuck," and Applicants will amend claim 26, line 1 to change "said effecting step" to "said effecting relative movement." Alternatively, Applicants authorize the Examiner to make the foregoing amendments by Examiner's amendment. With regard to claims 6 and 20, however, Applicants assert that "each said probe" is proper and therefore decline to change that phrase to "each of said probes." Should the PTO persist in the foregoing objection, Applicants request that a basis for the objection in the rules, the statutes, or the court cases or the MPEP be provided.

Applicants will traverse the allegation that claims 11, 12, and 15-17 are substantial duplicates of claim 31. Claim 31 allows the electronic device to be any of several types of devices, and each of claims 11, 12, and 15-17 requires that the electronic device be a particular type of device. There is, therefore, a clear difference in the scopes of claims 31, on one hand, and claims 11, 12, and 15-17, on the other hand.

There are also differences in the scopes of claims 21 and 22. Claim 22 is more narrow in scope than claim 21 because claim 22 requires that the electronic device be moved while claim 21 allows that one or the other of the electronic device or the probes be moved, and claim 21 further allows that both the electronic device and the probes be moved. Thus, while there is some overlap in the scope of claims 21 and 22, claim 22 is more narrow than claim 21. Claim pairs 23/24, 26/27, and 28/29 similarly differ in scope. Applicants will therefore also traverse the allegation that claims 22, 24, 27, and 29 are substantial duplicates of claims 21, 23, 26, and 28.

probes. In some test applications, the probes can be scrubbed across the terminals to break through oxide or other debris on the terminals. In some such applications, it can be desirable to control the scrubbing action of the probes, for example, to limit the size of the scrub mark left on the terminal and/or to avoid having a probe scrub off of a terminal.

The rejected independent claims—claims 1, 3, 6, 18, 20, and 31—of the present application address the foregoing issues by bringing probes into contact with terminals with a motion that includes a motion component that is parallel to a surface of the electronic device whose terminals are being contacted. That is, each of the rejected independent claims recites that the movement that brings the probes and the terminals of the electronic device into contact includes a motion component that is parallel to a surface of the electronic device that comprises the terminal. (Hereinafter the surface of an electronic device on which input and/or output terminals are located will be referred to as the "terminal surface.")

The parallel motion component recited in the independent claims of the present application can soften the force of the contact and can aide in controlling the size of the scrub mark left on the terminals by the probes and can further aide in keeping the probes on the terminals. The parallel motion can also control and reduce, and in some instances eliminate, various forces, including transitory forces, on the probes and/or the terminals brought about by bringing the probes and terminals into contact with each other.

In contrast, Montoya discloses a significantly different approach to reducing the size of scrub marks and keeping probes on terminals (the Examiner equated Montoya's bond pads 63 with the terminals of the claims of the present application). Montoya utilizes a standard "x, y, z" coordinate system to define directions in his disclosure. As can be seen in Figure 4 of Montoya, the "z" direction is entirely perpendicular to the terminal surface of Montoya's wafer 112 and dies 114, and the "x, y" directions are entirely parallel to the terminal surface. (As mentioned, the Examiner equated Montoya's wafer 112, of which the dies 114 are a part, with the electronic device of the claims of the present application.) Moreover, as expressly stated in Montoya, initial contact between the probes 122 and the terminals, which are labeled 63 in Figures 6 and 7, is effected by moving the wafer 122 in only the "z" direction. (Montoya col. 4, lines 60-65.) The foregoing corresponds to step 46 in Figure 5, and thereafter, the wafer 122 is moved further in only the "z" direction at step 48 and then moved only in the "x, y" directions at step 50. The "x, y" movement at step 50, however, occurs *after* the probes 122 and terminals 63 are brought

into contact using a purely perpendicular ("z") movement at step 46. Therefore, the movement that brings Montoya's probes 122 into contact with the terminals 63 of the dies 114 of Montoya's wafer 112 is purely perpendicular to the terminal surface of the wafer 112 and dies 114. Montoya does not therefore teach or suggest the recitations in independent claims 1, 3, 6, 18, 20, and 31 that the "relative movement" that brings the probes into contact with terminals of an electronic device includes a directional component that is parallel to the surface of the electronic device that comprises the terminals.

Applicants note that the oxide layer 62 shown in Figures 6 and 7 of Montoya is part of the terminal (or bond pad in the terminology used by Montoya). This is because, when present, an oxide layer on a metal terminal is typically the result of a chemical reaction between the metal of the terminal and oxygen in the ambient air and thus should typically be considered part of the terminal. More specifically, as known in the art, Montoya's oxide layer 62 formed on an outer surface of the metal 61 as a result of a chemical reaction between the metal 61 and oxygen in the air. Indeed, whenever terminals made of certain metals are exposed to air, the metal in the outer surface of the terminal reacts with oxygen and forms an oxide layer. The oxide layer 62 shown in Figures 6 and 7 of Montoya is thus the outer portion of the terminal (or bond pad) that has reacted with oxygen in the air to form an oxide layer 62, and the metal layer 61 is the portion of the terminal (or bond pad) that has not reacted with oxygen in the air. Thus, as Montoya expressly states in his disclosure, the bond pad 63 consists of both the metal layer 61 and the oxide layer 62. (See Montoya Figure 6 and 7.) Therefore, contact with the oxide layer 62 is contact with the bond pad or terminal 63.

In summary, the only motion taught or suggested by Montoya that brings probes 122 and terminals 63 into contact is purely in the "z" direction, which is purely perpendicular to the terminal surface of the wafer 112 or the dies 114. Montoya therefore fails to teach or suggest the recitation in independent claims 1, 3, 6, 18, 20, and 31 that the motion that brings probes and terminals into contact includes a motion component that is parallel to the surface of the electronic device on which the terminals are located. Khoury—which was relied on in the Office Action for its teachings regarding multiple probe tips and particular types of electronic devices—does not make up for the foregoing deficiency in Montoya. Independent claims 1, 3, 6, 18, 20,

and 31 are therefore patentable over Montoya and Khoury, whether taken individually or in combination.<sup>2</sup>

**B. Dependent Claims**

Dependent claims 4, 5, 7-17, and 21-30 depend from one of independent claims 1, 3, 6, 18, 20, and 31 and are therefore patentable over Montoya and Khoury. Moreover, dependent claims 4, 5, 7-17, and 21-30 recite additional features that are not taught or suggested by Montoya or Khoury.

For example, claim 7 recites that the motion that brings the probes and terminals into contact also includes a component that is perpendicular to the terminal surface of the electronic device. Thus, claim 7, which depends from claim 1, recites that the motion that brings the probes and terminals into contact includes motion components that are both parallel to and perpendicular to the terminal surface of the electronic device. In contrast, the "x, y" motion of step 50 of Montoya's Figure 4 is purely parallel to the terminal surface of wafer 112 and dies 114. As another example, claims 23, 24, 28, and 29 recite that the movement that brings the probes and terminals into contact is a straight line. The "x, y" motion of step 50 of Montoya's Figure 4 is circular or rotational (Montoya col. 6, lines 5-6.) and is therefore not a straight line. As yet another example, claims 21, 22, 26, and 27 recite that the movement that brings the probes and terminals into contact is in a signal direction that does not change. Again, the "x, y" motion of step 50 of Montoya's Figure 4 is circular or rotational and therefore includes many changes in direction. Thus, even if the "x, y" motion of step 50 of Montoya's Figure 4 were to be deemed the motion that brings Montoya's probes 122 into contact with the terminals 63 (which, as discussed above, Applicants assert is incorrect), that motion does not teach or suggest the addition recitations in at least claims 7, 21-24, and 26-29. Therefore, at least claims 7, 21-24, and 26-29 are independently patentable over Montoya and Khoury.

**III. Conclusion:**

In view of the foregoing, Applicants respectfully submit that the rejection of claims 1, 3-18, and 20-31 should be withdrawn and all pending claims allowed.

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<sup>2</sup> Similar arguments regarding Montoya can be found on pages 16 and 17 of the Amendment dated November 1, 2005.